# Pembroke District Fisheries Management Plan

## Background Information and Options

## A Summary

Ontario

Ministry of Natural Resources

Hon. Vincent G. Kerrio
Minister

Mary Mogford
Deputy Minister

# BACKGROUND INFORMATION AND OPTIONAL MANAGEMENT STRATEGIES AND TACTICS

## PEMBROKE DISTRICT

## FISHERIES MANAGEMENT PLAN

1987 - 2000

A SUMMARY

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## 1.0 INTRODUCTION

### 1.1 Purpose

A Fisheries management plan is being prepared for the Pembroke District this year. This document is the first step in the process and presents a summary of fisheries resource information and management options for public review. This report has been prepared in order to summarize information contained in a detailed background information document, to outline current problems and issues affecting the fisheries resource, to identify and evaluate potential strategies for managing the resource and to encourage public input regarding management strategies and tactics.

Following this review process the district will prepare a Fisheries Management Plan. It will identify the specific actions that are necessary to achieve the stated objectives. The district fisheries management plan is undertaken within the overall resource planning and management system of the Ministry. Strategic policy direction is provided to the plan through program policy, the Ministry's Coordinated Program Strategy and the District Land Use Guidelines. The District Fisheries Management Plan follows this direction with detailed resource information, provides the basis for any revisions and finally describes how the direction will be carried out.

This plan will initially be prepared with a planning horizon to the year 2000. The plan will be divided into five year operating periods within which strategies and tactics will be identified. It will be amended every five years.

### 1.2 Fisheries Management Planning Process.

The final draft of this plan represents a culmination of several steps broadly identified as follows:

(i) terms of reference (where a schedule for the completion of each phase is provided).
(ii) identification of objectives and targets.
(iii) collection and analysis of background information of problems and issues.
(iv) identification of optional management strategies and selection of a preferred option.
(v) preparation of a draft plan and finally
(vi) preparation of a management plan.

### 1.3 Detailed Background Report.

A detailed background information report is available for public review at the Pembroke District office.

In addition to the summary of the background information, this document presents optional management strategies and tactics. All strategies have been prepared within the context of Strategic Planning for Ontario Fisheries (S.P.O.F.) principles and in full recognition of other users of the resource base. Other services of the Ministry of Natural Resources have been given the opportunity to review this document and have provided comments in areas where the Fisheries Management Plan may affect their programs.

## 2.0 BACKGROUND INFORMATION.

### 2.1 The Resource Base

#### 2.1.1. Perspective

Pembroke District is one of six districts in Algonquin Region and encompasses the entire County of Renfrew* (see figures 1 and 2). The total area of the district is estimated at 810,000 hectares of which approximately 64,000 ha. is water. Approximately 41% of the district is Crown land, the remaining being private or land owned by public agencies including the Federal government, Ontario Hydro, and municipalities. An estimated 31,000 ha. is controlled by the Federal government (Atomic Energy of Canada Ltd. and Dept. of National Defense) and, therefore, normally not accessible to the public.

Population distribution is irregular. Concentrations are found in the Ottawa Valley Lowlands and the Bonnechere River Valley. The population in 1981 was estimated at approximately 87,485 with projected estimates of 95,300 by the year 2000.

The topography ranges from smooth to rolling valley areas in the east (the Ottawa Lowland) where agricultural activities predominate and population is concentrated, to moderately and strongly broken forested uplands in the west (Precambrian Upland). The lowland is chiefly floored by clays with sand and gravel deposits in the northern "handle" northwest of Pembroke and scattered tracts in Richards, Hagarty and Sherwood Townships and along the lake chain in the Bonnechere Valley. The Upland areas of the District which constitute over 65% of the total area are composed of the hummocky, rock knob landscape of the Precambrian Shield, interspersed with varying sized lake basins.

With the exceptions of small portions of the Mississippi River watershed and the Little Mississippi watershed all the land area of Pembroke District is drained by rivers flowing directly into the Ottawa River to the east. Seven major rivers flow into the Ottawa River, the largest watersheds within the district being those of the Madawaska and Bonnechere Rivers.

REGIONAL SETTING FIGURE 1

# PEMBROKE DISTRICT
## ALGONQUIN REGION

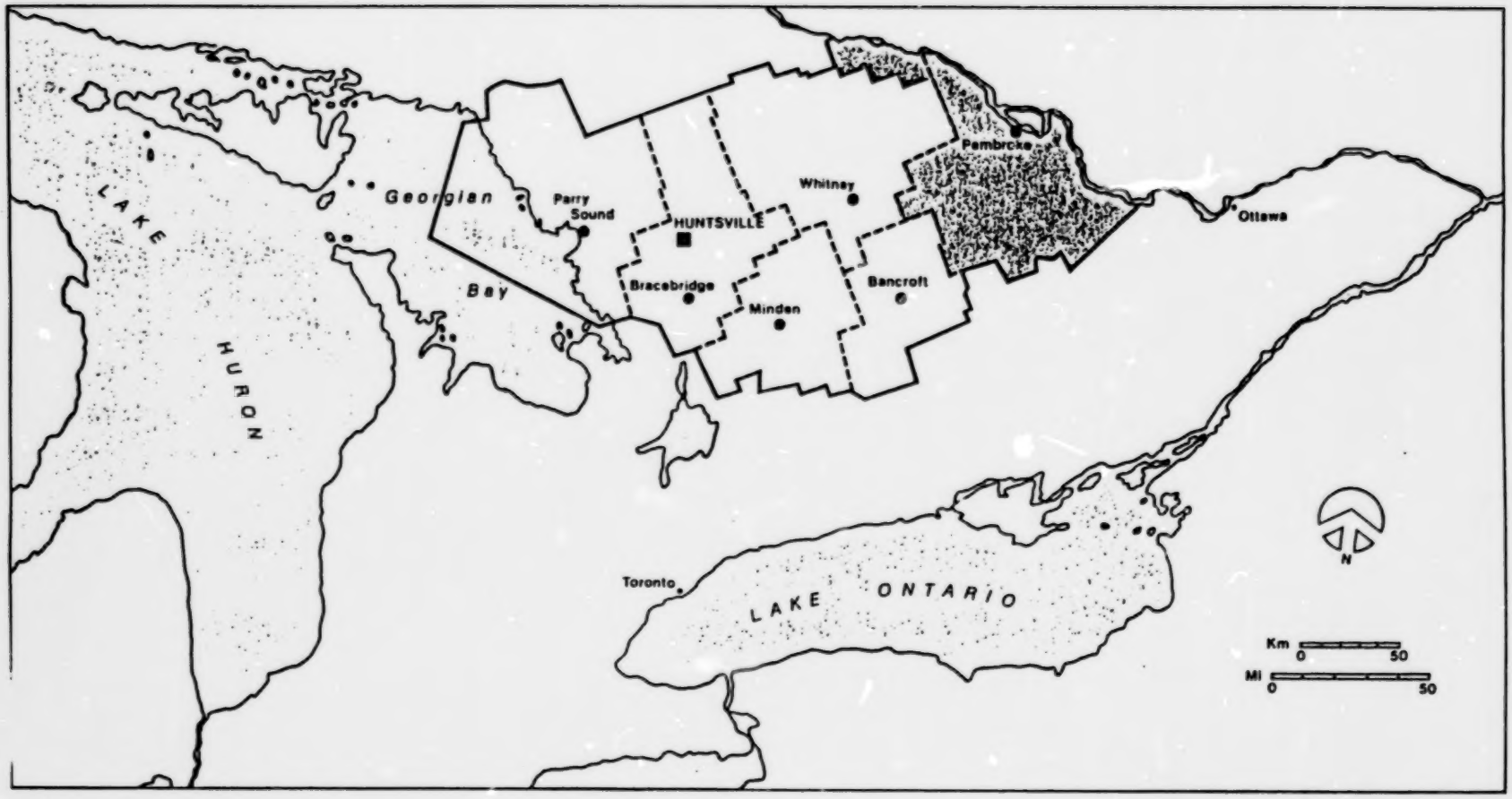
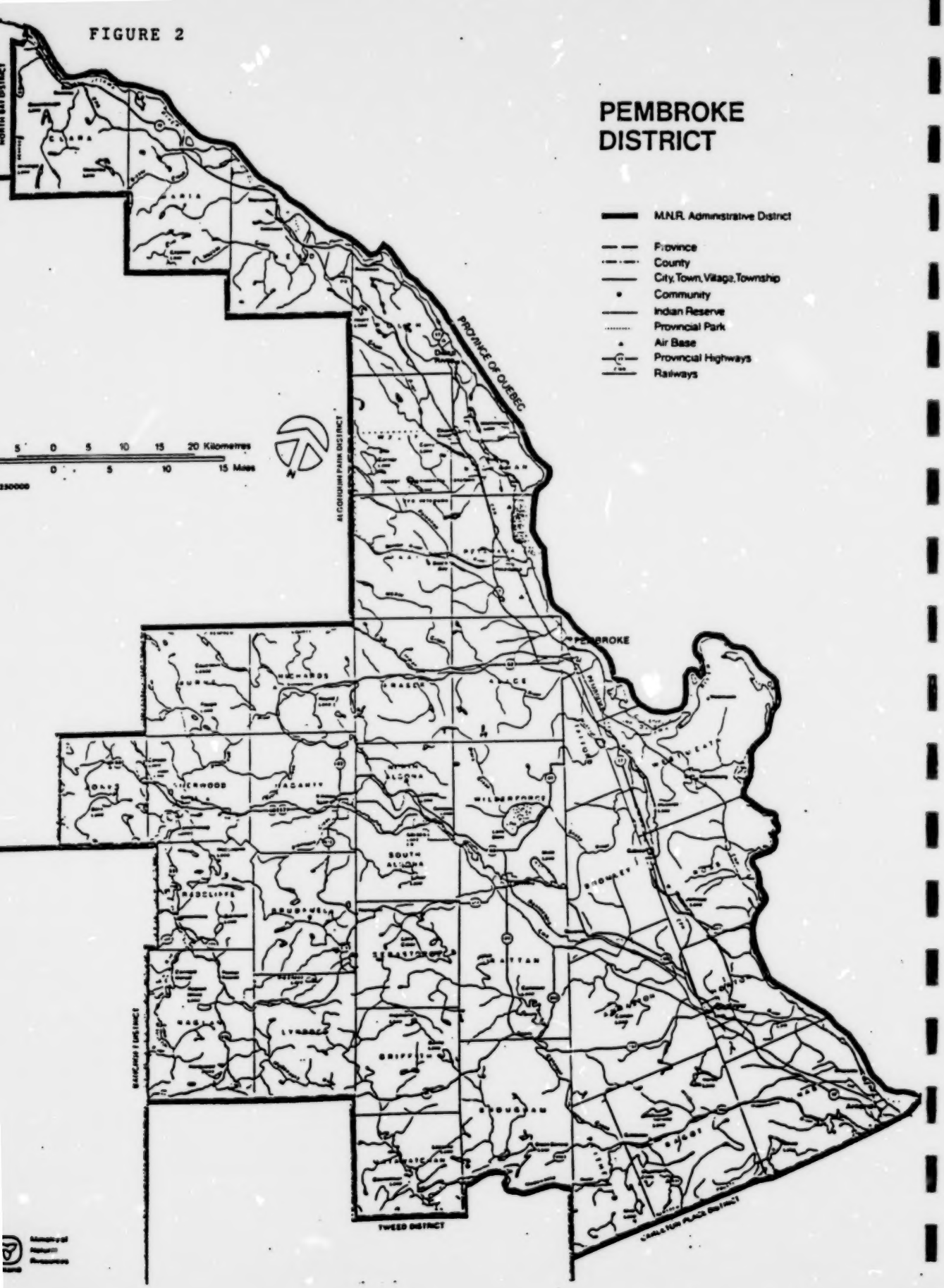


FIGURE 2


PEMBROKE
DISTRICT
M.N.R. Administrative District
Province
County
City, Town, Village, Township
Community
Indian Reserve
Provincial Park
Air Base
Provincial Highways
Railways
PROVINCE OF QUEBEC
ALGONQUIN PARK DISTRICT
PEMBROKE
WILBERFORCE
SOUTH ALGONA
BRUDENELL
EASTFORD
GRIFFITH
STRUTHAM
BRUDENELL
LYNDOCH
RAGLAN
HAGARTY
RICHARDS
BURNS
TWEED DISTRICT
5 0 5 10 15 20 Kilometres
0 5 10 15 Miles

### 2.1.2. The Resource

Because the district lies in two physiographic regions, Pembroke District has lakes which support both cold and warm water fisheries.* The warmwater lakes are scattered throughout the district. The District has a number of walleye fisheries, including Round Lake, Golden Lake, Calabogie Lake, Lake Madawaska, Centennial Lake and the Ottawa and Madawaska Rivers. It is estimated that approximately 35% of the district's lakes contain northern pike, while approximately 50% contain small or largemouth bass.

Coldwater species may be found in the highland areas in a belt running from Calabogie Lake northwest along several ridges - Mt. St. Patrick, Opeongo and Wilno. As well, there are a number of coldwater fisheries in Head, Clara and Maria Townships, all of which are maintained by stocking programs for salmonids.

The allowable harvest represents the best estimate of the harvestable surplus of sports fish annually available to the angler while still allowing for the maintenance of fish stocks. It is estimated that a total of 652,340 kg/yr. is available to be harvested, of which 2% is coldwater sports fish, 65% is warmwater sports fish, and 33% is panfish/coarse fish.

Figure 3 (in pocket at back of booklet) is a map of the district's fishery resource base. Included on this map are warm and coldwater fishery locations and spawning areas. As well, maps of the Baitfish Block System, Access to Water and Land Tenure may be found in the Appendix (Figs. 4, 5, 6).

Table 1 provides a summary of the district's fisheries resource.

## 2.3 Resource Use and Projections

This section summarizes how the fish resource is currently being used by the major user groups (sports, commercial and bait fishermen) and determines what the projected use is expected to be by the year 2000.

* Coldwater fish include: lake trout, rainbow trout, brook trout, splake, whitefish and herring.

Warmwater fish include: northern pike, walleye, smallmouth and largemouth bass, muskellunge.

Coarse Fish include: perch, panfish, common white sucker, catfish, bullheads etc.

**TABLE 1** Summary of Fisheries Resources available in Pembroke District

| Species [1] | No. of Lakes | Water Surface Area (ha) | Allowable Harvest(kg) |
|---|---|---|---|
| **Surveyed Lakes** | | | |
| Cold | 83 | 17,320 | 13,430 |
| Warm | 167 | 20,130 | 97,300 |
| Panfish/Coarse Fish | - | - | 39,000 |
| | | | 149,700 |
| **Unsurveyed Lakes** | | | |
| Sport ) | 1,018) | 5,080 | 20,700 |
| Panfish/Coarse Fish) | ) | | 11,100 |
| | | | 31,800 |
| **Unsurveyed Streams and Rivers** | Length(km) | | |
| Cold Water | 110 | 50 | (Sports) 100 |
| Warmwater Streams | 2,550 | 1,280 | (Sports) 10,100 |
| Warmwater Rivers [2] | 710 | 32,600 | (Sports)258,500 |
| Panfish/Coarse Fish | - | - | 151,700 |
| | | | 420,400 |
| **Head, Clara & Maria** | | | |
| Rivers and Streams | - | - | 35,600 |
| Lakes | - | - | ) 2,700 |
| Stocked Lakes | - | - | ) |
| Panfish/Coarse Fish | | | 12,200 |
| | | | 50,500 |
| TOTAL ALLOWABLE HARVEST | | | 652,400 |

[1]Coldwater fish include - lake trout, brook trout, rainbow trout, splake, whitefish, herring.
Warmwater fish include - walleye, northern pike, muskellunge, smallmouth bass, largemouth bass panfish include - yellow perch, rock bass, pumpkinseed.
Coarse fish include - common white sucker, bullheads, catfish etc.

[2]The district's major rivers include: Ottawa, Barron, Bonnechere, Snake, Petawawa, Muskrat, Madawaska.

## Sport Fishing

Based on the 1980 Provincial Angler Survey, an estimated 90,800 adult anglers (80,500 resident, 10,300 non-resident) exerted some 1,194,000 angler days/occasions of fishing effort in Pembroke District (see Table 2 current demand). Projected demand to the year 2000 suggests a 15% increase in both the number of anglers and associated angling opportunities. Based on these assumptions the demand is expected to increase to 1,428,100 angling occasions based on an expected harvest of 683,667 kg. of fish.

## Commercial Fishery

Commercial fishing interest in the past has been minimal with only two fishermen licenced since 1977. These licences were for sturgeon and catfish in the Ottawa River. At the present time no commercial fishery exists in the district, however, there are six licences issued to "Propagate and Sell Bass and Trout" and three licences issued for fishing preserves. Potential does exist for the harvest of catfish as a commercial species.

## Bait Fishery

There are currently 60 licenced baitfish harvesters and 69 establishments licenced to sell baitfish within the Pembroke District. The block system consists of 105 individual blocks and 10 multiple use blocks. Annual returns indicate fluctuations in harvest of between 50,000 and 75,000 dozen baitfish with an estimated gross value of between 45,000 and 80,000 dollars.

The objective for baitfish is to maintain current production. However, the baitfish industry in the district is expected to slowly increase from its present level due to the increased demand by the sport fishery. This demand may put a stress on the resource which cannot be met by present reproduction capacity.

## Tourist Operators

Fishing is a drawing card for the majority of tourist operators in the district, although none relies solely on revenues from fishing.

A significant amount of fishing pressure is exerted by clients of these tourist establishments.

## Non-consumptive Users

The district's fish hatchery located near Petawawa provides the public with an opportunity to view trout rearing facilities. An estimated 7500 people tour the hatchery each year.

**TABLE 2**

## RESOURCE USE And TARGET TESTING (Available Opportunities)

| Resource | Current Demand (1980) [4] | | Anticipated Demand by Year 2000 [5] | | D.L.U.G. Target [7] | | Resource Capability [8] (Allowable Yield) | | Interim Refined Target | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Opportunities | Harvest (kg) | Opportunities | Harvest (kg) | Opportunities | Harvest (kg) | Opportunities | Harvest (kg) | Opportunities | Harvest (kg) |
| Coldwater [1] | 84,774 | 16,955 | 97,490 | 19,498 | 419,200 | 89,600 | 80,650 | 16,130 | 80,650 | 16,130 |
| Warmwater [2] | 591,030 | 295,515 | 679,685 | 339,842 | ) 890,800 | 190,400 | 844,420 | 422,210 | 679,685 | 339,842 |
| Pan/Coarse Fish [3] | 518,196 | 259,098 | 595,925 | 297,963 | ) | | 428,000 | 214,000 | 428,000 | 214,000 |
| | 1,194,000 | 571,568 | 1,373,100 | 657,303 | 1,310,000 | 280,000 | 1,353,070 | 652,340 | 1,188,335 | 569,972 |
| Total | | | (1,428,100)[6] | (683,667)[6] | | | | | | |
| Bait | | | | | Baitfish 111,000 doz./yr. | | N/A | 50-75,000 doz./yr. | N/A | 50-75,000 doz. |

[1] Coldwater fish include: Lake Trout, Brook Trout, Rainbow Trout, Splake, Whitefish, Herring.
[2] Warmwater fish include: Walleye, N. Pike, Muskie, Smallmouth Bass, Largemouth Bass.
[3] Panfish include: Yellow Perch, Rock Bass, Pumpkinseed.
Coarse fish include: C. W. Sucker, Bullheads, Catfish etc.
[4] Demand figures (based on 1980 Provincial Angler Survey) do not include Head, Clara & Maria Townships, but do include resident and non-residents.
Harvest determined from provincial standards of 0.2 kg./opp. for coldwater and 0.5 kg./yr. for warmwater.
[5] Based on current demand plus 15% user increase.
[6] Since this number does not include Head, Clara & Maria, 55,000 opportunities (see D.L.U.P. guidelines), and 58,000 lbs. or 26,364 kg. must be added.
[7] 1.31 million opportunities based on a catch of 280,000 kg. of fish; 32% coldwater, 68% warmwater. Includes 26,364 kg. of fish and 55,000 opportunities from Head, Clara and Maria.
[8] Based on M.E.I. – allowable yield calculations from fisheries management plan and a provincial quality standard of 0.2 kg/opportunity for coldwater and 0.5 kg/opp. for warmwater.

## 2.3 Current Management Practices

The following is a summary of the district's current management activities.

### Enforcement

Active enforcement of fisheries legislation is a high priority in the district program. Input and assistance from both "In Ministry" and trained volunteer cooperators during peak spawning periods is part of an efficient enforcement program. The district currently expends 300 man days of regular staff and approximately 50 man days of volunteer time on fisheris enforcement.

### Habitat Management

Habitat management involves inventory, assessment, protection, and the rehabilitation of degraded habitat. To date 250 lakes and seven streams have been surveyed. At present, habitat management involves the rehabilitation of degraded fish habitat, mainly spawning beds. Some of these projects are carried out by local Fish & Game Clubs through the Community Fisheries Involvement Program (CFIP).

### Population Management

Population management involves harvest assessment and control, population manipulation (i.e. stocking), reclamation, and net and release programs. Harvest assessment information of recreational fisheries is obtained primarily by creel census programs. The district has carried out a number of creel census projects on selected lake trout and larger warmwater fisheries.

Fish stocking has been a popular technique to rehabilitate and maintain fisheries in the district. The largest part of the district stocking program involves the maintenance of coldwater fisheries. Some reclamation work has been done to eliminate coarse fish and restock with brook trout. Brook, rainbow and lake trout as well as splake and walleye are stocked in the district. The Pembroke Fish Culture Station at Petawawa raises lake trout and brook trout. The majority of the fish stocked in the district comes from this facility.

The Pembroke Fish Culture Station at Petawawa raises Lake Trout and Brook Trout. A large percentage of these fish are stocked in lakes within Algonquin region.

### Fisheries Extension Services

Extension services promote fisheries management programs and provide assistance and expertise regarding farm ponds, private fish stocking, private fish hatcheries and aquatic rehabilitation projects. A good deal of time and effort is also expended in the administration and supervision of Community Fisheries Involvement Programs (CFIP), advising the public, and working with schools and fish and game clubs in the district.

## 2.4 Supply/Demand Analysis and Target Refinement

The overall fisheries goal for the Ministry of Natural Resources is to protect, rehabilitate, enhance and maintain fish communities and their environment to provide an optimum contribution of fish, fishing opportunities and associated social and economic benefits to the people of Ontario.

To direct management efforts in an attempt to meet these objectives, specific interim targets had originally been formulated under the direction of the District Land Use Guidelines (DLUG). These objectives and targets reflect provincial interests and require refinement consistent with the capability of the local resource and the demands of user groups. As can be seen from Table 2, the DLUG targets for individual species assemblages do not correspond with the estimates of the present resource capability. However, the total opportunities available do not change significantly (3.6%) and the difference in overall harvest is a reflection of the success rates used (i.e. - DLUG used 0.214 kg/opp. This exercise has used Provincial standards of 0.2 kg/opp for coldwater and 0.5 kg/opp for warmwater).

The DLUG baitfish targets were based on total use of the resource. Future harvest may increase but present harvest practices indicate an interim target of 50 - 75,000 doz./yr.

Now that more information has become available it is obvious that even though the resource is capable of producing more opportunities, emphasis must now be placed on utilizing the district's warmwater fishery.

The capability of the resource to meet user demands by the year 2000 must also be assessed. As mentioned previously, based on the fishery that exists at present, the allowable harvest is estimated at 651,830 kg./yr. In Table 2, each of the species assemblages estimates have been multiplied by a provincial success rate to determine the number of fishing opportunities that are presently available.

Table 2 indicates that the present resource capability of 1,353,070 opportunities is able to meet current demand of 1,194,000 opportunities. However, it will be exceeded by an anticipated demand of 1,428,100 opportunities by the year 2000.

Since the projected harvest of coldwater and coarse/panfish exceeds the resource capability, the resource capability opportunities and harvest become the interim refined target (see Table 2). Since the projected use harvest for the warmwater fisheries does not exceed the present resource capability, it becomes the interim refined target.

Based on our present knowledge of the resource base the new interim targets reflect the best estimate of what the fisheries of the Pembroke District can produce. It is, therefore, imperative that the district manage the resource in such a way as to maintain and ensure protection of existing and future fisheries stocks and habitat.

## 2.5 Problems and Issues

In order to meet present and anticipated demands on the fishery resource, there are problems and issues which must be addressed and the most suitable options selected. If at all possible, fishing opportunities must be available at an acceptable rate of success. This can best be accomplished through cooperation between the resource managers and the users.

The primary concerns at present can be summarized as follows:

1. Habitat Loss And/Or Loss of Environmental Quality

   Habitat loss or degradation of water quality have resulted from a number of causes including shoreline development, nutrient enrichment, agricultural practices, chemical or mechanical control of aquatic weeds, beaver activity, water drawdowns, acid precipitation, and contaminants. Many of the warmwater fisheries require rehabilitation of spawning and fry nursery areas.

2. Limited Coldwater Habitat/Producing a Coldwater Fishery to Accommodate All Users.

   There is a limited amount of coldwater habitat in the district to support the salmonid fishery. The existing coldwater fishery suffers heavily from angling pressure (legal and illegal), particularily during the winter months. As a result, overexploitation occurs where the harvest exceeds the capabilities of the natural resource to meet the demand. At present, the demand for trout fishing must be met by extensive stocking of hatchery fish.

   More artificial fisheries from underutilized waters may be created, however the availability of suitable waters and their carrying capacity is limited.

   As a result, anglers may have to either reduce angling pressure, redirect that effort to another target species (i.e., bass, pike), or accept a lower rate of success.

3. Illegal Harvest

The illegal harvest of fish has severe effects on fish stocks, both natural and stocked, resulting in the loss of legitimate opportunities. Warmwater spawning runs are most heavily impacted by spearing and netting spawning fish. Stocked, slow growing salmonids such as lake trout are often taken by set lines during the winter fishery (i.e. Round, Kamaniskeg Lakes). Lake trout are also taken illegally from lakes such as Muskrat before and after the two week winter season. Over limit catches also reduce legal opportunities and cause additional stress on the sport fish community.

4. Introduction of Exotic or Non-Indigenous Species

The introduction of smelt into Bark and Kamaniskeg Lakes appears to have had a detrimental effect on Lake Trout fisheries and probably caused the loss of the whitefish population. The introduction of yellow perch, rock bass and pumpkinseed into the small coldwater lakes such as Rock Lake, Lyndoch Township, Acorn Lake, Richards Township, Flat Iron Lake in Fraser Township, Garvin Lake in Grattan Township has resulted in the loss of brook trout populations. Well meaning or careless anglers have introduced warmwater species into small coldwater lakes, which has resulted in the loss of coldwater fishing opportunities.

5. User Conflicts

Although the district does not face the commercial food fishery versus angler fishery conflict, there is still friction among the multiple users of the resource. Anglers and other recreational users conflict, while bait harvesters come in conflict with both groups. There are also possible future conflicts between winter and summer users of the resource, i.e. regulation of winter or summer fishery to protect stocks. If the decision to close lakes is made, should the winter fishery be closed at the expense of local interests or should the summer season be shortened, i.e. later opening date - at the expense of the tourist industry?

Numerous land and water uses impact on fisheries including drainage, agricultural land use, industrial activities, hydro activities and improper timber harvesting, to name a few. Conflicts often exist between short term economic interests and long term maintenance and welfare of the fisheries resource.

6. Lack of Public Awareness and Unrealistic Resource Demands

Many members of the general public are not familiar with fundamental concepts of fisheries management. This is borne out in the unrealistic expectations of the benefits derived from stocking as opposed to the benefits derived from the rehabilitation of natural fisheries. The resource potential must first be defined, and then the public must be made aware of the limitations. The fisheries resource must be managed in such a way as to meet realistic short and long term targets.

7. Limited Access

Limited access to fishing opportunities has an important impact in some areas in the district such as Mount St. Patrick and Garvin Lake areas. Access to some waters is limited by gates on roads erected by private individuals to protect private properties. Access to areas on large rivers is limited by the shortage of boat launching facilities. Military boundaries deny access to some coldwater potential. These factors reduce angling opportunities.

8. Inadequate Scientific Knowledge

Fisheries managers are hampered by the lack of available scientific knowledge regarding the many complex conditions present within the delicate aquatic ecosystems of a lake. The lack of sufficient data for recreational fisheries and bait fisheries in such areas as productivity (allowable yields) assessment, fish community interactions etc. reduces the effectiveness of some of the decisions required to manage these resources.

## 3.0 OPTIONAL MANAGEMENT STRAGEGIES AND TACTICS

### 3.1 Introduction

An important element of the planning process is the identification, assessment and selection of fisheries management strategies and related tactics to attain the targets.

Strategies are the planned actions to resolve problems, while the tactics are the individual management projects that may be undertaken to implement a particular strategy.

A range of options is available but not necessarily limited to those presented here. No preferred course of action is suggested at this time but rather after public input and review, it will be presented in the form of a draft Fisheries Management plan. This stage of the planning process is considered to be one of the most important, as the public and key user groups will have the opportunity to review and comment on all management strategies considered by the district.

### 3.2 Strategies and Tactics

The following optional management strategies and tactics are designed to meet the fisheries objectives and targets and address each problem. Please note that in some cases the strategies are not optional but must be part of the regular work plan. These are presented at the beginning of each problem/issue.

**1. Problem/Issue - Habitat Loss And/Or Loss of Environmental Quality - Loss of habitat or environmental quality may result from a number of causes thus influencing the number of fishing opportunities available.**

| | | |
|---|---|---|
| **In order to address this problem, it is essential that the district:** | Identify all waters in the district as to coldwater (particularly lake trout) and warmwater (particularly walleye) fisheries. | -This item is not considered to be optional. The basic inventory is essential to direct efforts to protect the habitat. |
| **Identify Existing Fisheries Habitat** | Identify major spawning areas within these fisheries. | |
| | List all spawning areas as to degree of degradation and priorize for rehabilitation work. | |

| **Optional Strategies** | **Optional Tactics** | **Comments** |
|---|---|---|
| **1. Regulate/Shoreline Development** | 1. Control development on all lakes. | -M.N.R. has limited authority to control development on privately owned land. This restriction would greatly impact on development of waterfront property. |
| | 2. Restrict development on lakes with coldwater fisheries. | -Such a restriction would impact on larger oligotrophic lakes such as Bark Lake, Lake Clear, Burns Lake, Charlotte and Diamond Lakes. |
| | 3. Restrict development in areas immediately adjacent to spawning and nursery areas for both cold and warmwater species. | -This will only restrict development on certain areas of lakes. Landowners must be prepared to accept the decision of this Ministry as to the areas to be protected. |
| | 4. Allow complete freedom of development on all lakes. | -This option could result in the degradation of water quality and subsequent loss of fisheries. |
| **2. Rehabilitate Degraded Habitat** | 1. Initiate Ministry projects to rehabilitate spawning areas. | -This is the present practice in the Ministry. |

| Optional Strategies | Optional Tactics | Comments |
|---|---|---|
| **2. Rehabilitate Degraded Habitat (cont'd.)** | 2. Promote CFIP projects in conjunction with Ministry projects to rehabilitate spawning and nursery areas in major fisheries. | -The introduction of CFIP projects has enhanced the rehabilitation of degraded fisheries habitat in the district. |
| | 3. Direct all rehabilitation programs to CFIP projects and restrict Ministry input to expertise only. | -This would leave more funding for other projects such as data collection, creel census and fish purchases for stocking. However, this may be seen as an abrogation of M.N.R. responsibility. |
| | 4. Rely on nature to rehabilitate the degraded areas and allow natural selection to select the best species for the habitat. | -This could cause the loss of natural populations due to the loss of habitat. In some cases it would alter populations from coldwater to warmwater species, but not necessarily at a loss of opportunities. |
| **3. Create New Fisheries Habitat** | 1. Reclaim coldwater lakes (Brook Trout habitat) with the use of fish toxicants. | -Fish toxicant is expensive and may require other measures to be an effective answer to the problem. |
| | 2. Create and enlarge warmwater spawning areas by the addition of suitable materials into optimum fast water (Walleye) Clean coldwater streams and add deflectors, hides and suitable spawning materials for trout species. | -These are labour intensive projects. |
| | 3. Rehabilitate lake trout spawning shoals. | -To be effective in the long term, this will require control of original causes of degradation. |
| | 4. Utilize the fisheries habitat in whatever condition it may be in without any improvements. | -This may supply a lower quantity of fishing opportunities. It would not necessarily result in the complete loss of opportunities (pan fish). |
| **4. Monitor Fish Contaminants** | 1. Using the prescribed techniques in conjunction with the Ministry of the Environment monitor the contaminant levels in sports fish in selected lakes. | -This is presently part of the district management practices. We will continue to monitor these levels where required. |

**In order to address this problem, it is essential that the district:**

| | | |
|---|---|---|
| **Identify the Coldwater Fisheries of the District** | The coldwater fisheries in the district must be identified and priorized as to their importance (in the district management planning). | -This is not an option, but rather information which must be collected in order to provide the proper direction in maintaining these fisheries. |
| **Attempt to Minimize Habitat and Fishing Opportunity Losses When Fisheries Management Conflicts with Higher Priority Uses** | 1. In some cases conflicts arise from time to time between the Ministry and water users. The only solution is compromise and agreement. The Ministry must negotiate an acceptable solution which in some cases is not totally in the best interests of the fishery. Unfortunately we may be forced to allow the resource to be somewhat diminished as an alternative to complete loss. Our alternatives must come from other sources such as intensive stocking, for example in Bark Lake to offset the necessary demands for water by Hydro. Agricultural practices such as fertilization are a necessity, but may cause water quality degradation. In this instance, we may have to select a species of fish which is more suitable to the degraded environment. | -The managers endeavor to manage the resource to benefit all concerned and although in certain instances the tactics may not solve the problems they are made in the best interests of all concerned. These tactics are used in order to save as much of the resource as is possible under the circumstances of the situation. |



| **Optional Strategies** | **Optional Tactics** | **Comments** |
|---|---|---|
| **1. Protect the Lake Trout Fisheries in the District and Evaluate Suitability** | 1. Evaluate all lake trout lakes in the district and protect only those which have natural spawning. | -This would leave the district with very few lake trout lakes and force some means of closure to protect these fisheries. |
| | 2. Protect the lake trout lakes which still maintain the biological and chemical characteristics required to provide a viable fishery. | -Some of these lakes could be made more viable if there were other protection factors used such as the reduction of fishing pressure. |

| Optional Strategies | Optional Tactics | Comments |
|---|---|---|
| **1. Protect the Lake Trout Fisheries in the District and Evaluate Suitability (Cont'd.)** | 3. Protect all the lakes which had lake trout populations whether they can still produce a fishery or not. | -This will mean the loss of the coldwater potential for species other than Lake Trout, i.e. splake, rainbow trout. |
| | 4. Protect the viable lake trout fisheries in the district, e.g. Bark Lake, Kamaniskeg Lake, Burns Lake, Charlotte Lake, Diamond Lake. Convert those which are not viable lake trout fisheries to other more suitable coldwater fisheries such as rainbow trout or splake. | -This option would best utilize the existing potential for coldwater species. |
| | 5. Convert all the lake trout fisheries in the district to other coldwater fisheries (i.e. splake, rainbow trout). | -This will cause the complete loss of all Lake Trout, natural or artificial or combination of the two. |
| | 6. Discontinue stocking Lake Trout lakes and allow the lakes to select the appropriate species. | -This would cause the complete loss of all coldwater fishing in the larger lakes in the district. |
| **2. Reduce Pressure on Lake Trout Populations** | 1. Reduce length of season. | -We have not selected the complete closure of lakes as an option because our coldwater fisheries are maintained to a great extent by stocking. The spreading out of the pressure over a longer period of time should serve the same purpose. |
| | 2. Encourage the shifting of pressure to other species such as walleye and pike. | -It may be difficult to change angler preferences. |
| | 3. Create new fisheries in areas adjacent to the lake trout fisheries. Stocking former lake trout lakes with splake as an alternative to lake trout. | -This option could open the way to protective closures of lake trout lakes at times of high vulnerability without the total loss of fishing opportunities. |
| **3. Regulate Harvest in Extreme Cases** | 1. On lakes such as Burns Lake which have extreme pressure consider any or all of the following:<br>1. Restrict equipment to one line per fishermen.<br>2. Reduce daily limit to 2 Lake Trout<br>3. Close the lake to winter fishing.<br>4. Introduce size limits. | -Some of the lakes in the district receive pressure which will eventually cause the loss of the lake trout fishery. These lakes require special management tactics in order to protect the trout from extinction. |

| Optional Strategies | Optional Tactics | Comments |
|---|---|---|
| **4. Reduce the Illegal Harvest** | 1. Request from the judicial system that for convictions for over limits of coldwater fish and set lines in coldwater lakes, the loss of fishing privileges be part of any penalty.<br>-would fit in with a Provincial angling licence.<br>-would educate the public of the impact of over fishing. | -This tactic could be incorporated with licence renewal system. If a person loses his privileges this fact would be made known to licence issuers and the person convicted of the offence could not buy a licence. |
| | 2. Increase public awareness/education. | -Educating the public user regarding the detrimental effects of illegal harvest and encouraging programs such as report-a-poacher may help reduce the amount of illegal fishing. |
| | 3. Increase enforcement effort. | -Increased enforcement, particularly during lake trout spawning runs is essential. |
| **5. Fish Stocking** | 1. Maintain current level and frequency of stocking. | -At present we are stocking about 60 lakes per year with approximately 135,000 salmonids (lake, brook, rainbow trut, splake). |
| | 2. Change the rotation to every year on lakes which receive heavy pressure. | -This would affect lakes such as Tooey Lake, Twin Lakes, St. Pierre and others which are adjacent to travelled roads and result in reduced stocking to other, less accessible lakes. |
| | 3. Stock lakes which are easily accessible yearly and stock lakes not easily accessible on a three or four year rotation basis. | -This would provide a fishery with more fish but a smaller sized fish. Directed toward the user who cannot travel any distance from the travelled road. |
| | 4. Close selected brook trout lakes to winter fishing to provide a fishery which supplies a larger fish for the more selective anglers during the summer. | -This option would work better if we could deter access by ATV's. |
| | 5. Utilize splake and rainbow trout as alternatives for lake trout opportunities. | -This alternative will utilize all the coldwater habitat available before it is lost to other species. |

| Optional Strategies | Optional Tactics | Comments |
|---|---|---|
| **5. Fish Stocking (Cont'd.)** | 6. Reclaim brook trout lakes which produce low return from stocking programs due to competition from coarse fish. | -This option will produce better returns from the stocking program. It will also make the stocking of fish in these lakes more expensive because of the cost of the reclamation. |
| | 7. Only stock trout which are bigger than 20 fish to the pound. This will ensure they have a better chance for survival. | -This could reduce the availability of stock for planting in years when the stocks are small in size. |
| | 8. Encourage Fish and Game Clubs to adopt a lake to stock. | -This program is presently in practice in the district and has been found to be very successful. |
| **6. Protect fisheries from intensive angling impacts.** | 1. Eliminate all forms of fish derbies which kill the target species. | -This would reduce extreme impacts of heavy angling pressure over a short period of time. |
| | 2. Eliminate fish derbies in which the target species are coldwater salmonids. | -This option would protect the trout species from extreme pressure over a short period of time. |
| | 3. Eliminate fish derbies which kill the target species in all lakes under 500 ha. | -A fish derby on a small lake could eliminate an entire years production and even eliminate a viable fishery in one day. |
| | 4. Restrict fish derbies which kill the target species to pan fish only. | -Panfish create good fishing opportunities and because they are very prolific could withstand heavy pressure of a fish derby. |
| | 5. Allow fishing tournaments where the target species are weighed and released. | -This form of tournament allows the proponent (game & fish clubs etc.) to utilize but not destroy the fishing resource. |
| | 6. Allow all forms of fish derbies during the open season for all species. | -If this form of derby is used, it could be very detrimental to the management of vulnerable fisheries. |
| | 7. Discourage the use of tagged fish for large prizes which entice anglers who would not ordinarily take part in this type of recreation. | -Anglers who are definitely interested in contests will take part without having to be enticed i.e. (tag worth large amount of money). |

**3. Problem/Issue - Illegal Harvest - The illegal harvest of fish results in severe impacts on fish stocks as well as the loss of legitimate opportunities.**

**In order to address this problem, it is essential that the district:**

| | | |
|---|---|---|
| **Identify Areas of Illegal Harvest** | 1. Monitor spawning runs and major sport fishing areas in the district and map areas where there is illegal netting, spearing or dipping for spawning fish. These will be walleye spawning shoals, lake trout shoals. Identify areas such as Round Lake, Diamond Lake and Charlotte Lake where there is a very heavy set line fishery during the winter season. | -This item is not optional if we expect to maintain or improve our existing fisheries. This phase of the program is being carried out to the capabilities of the present manpower and funding at our disposal. |
| **Optional Strategies** | **Optional Tactics** | **Comments** |
| **1. Minimize the Illegal Harvest** | 1. Close winter fishery to stop set line fishing - severe problems on Round Lake, Golden Lake, Charlotte Lake and many of the smaller lakes which will not stand the pressure. | -This option would reduce the set line problem during the winter, but would also reduce fishing opportunities to the angler. |
| | 2. Make it illegal to take fish by any means other than angling - (any species any time) - no spearing or dipping during the spring months for common white sucker. | -Reduces recreation opportunities - dipping for suckers. |
| | 3. Set up Report a Poacher program for the public and educate them to report ongoing instead of after the fact infractions. | -The public demands enforcement but people are very reluctant to get personally involved. |
| | 5. Hire an additional Conservation Officer. | -The hiring of another conservation officer in this district would reduce individual officer workload and increase effectiveness. |

4. Problem/Issue - Introduction of Exotic or Non-Indigenous Species - The introduction of these species creates competitive stress on existing sports fisheries.

In order to address this problem, it is essential that the district:

| | | |
|---|---|---|
| **Prevent Undesirable Fish Introductions** | Enforce existing regulations and make revisions in regulations where necessary. | -This is not an option, but part of the present enforcement program in the Pembroke district. |
| **Optional Strategies** | **Optional Tactics** | **Comments** |
| 1. Restrict Access of Undesirable Fish to Selected Waters | 1. Restrict the use of live bait in all coldwater fisheries. | -This would reduce the introduction of perch etc. to small trout lakes. Would reduce the sale of the bait industry in the district. |
| | 2. Tighten the inspection system and licence issuing procedure for the bait industry. | -Would require legislation changes and regulations which would have to be acceptable Province wide. |
| | 3. Pass legislation which would make it illegal to possess or use bait fish in any form in all district lakes. | -Would reduce the loss of fisheries to non-indigenous species. Would completely eliminate the bait fish industry in the Pembroke district. |
| 2. Rehabilitate Suitable Waters Which Have Been Lost to Exotic or Non-Indigenous Species | 1. Reclaim small Trout lakes lost to warmwater species (perch). Stubinski Lake, Acorn Lake, Buck Mountain Lake are examples. | -Effective management but very expensive. |
| | 2. Controlled removal of non-indigenous species by netting. Calabogie Lake is an example. | -This type of project will remove some of the target species but is very labour intensive and not completely effective. The few fish left (perch - pumpkinseed) can reproduce faster than the project could remove them. |
| | 3. Introduce top predators to larger lakes with suitable habitat for rainbow or splake, Halfway Lake, McMaster Lake, Schavens Lake for example. | -This tactic can be effective as long as the fish are available for stocking. Fish of adequate size are expensive. |

| Optional Strategies | Optional Tactics | Comments |
|---|---|---|
| **2. Rehabilitate Suitable Waters Which Have Been Lost to Exotic or Non-Indigenous Species (Cont'd.)** | 4. Destroy coarse fish spawning beds by mechanical or chemical means in the larger coldwater lakes. | -This option may be effective if there is enough stock to fill the niche left by the reduction of a year class of undesirable species (pan fish). |
| | 5. Educate the public about the impact and consequences of accidental or intentional introduction. | -This option will require funding. Should be part of any strategy to protect fisheries from detrimental introductions. |

5. **Problem/Issue - User Conflicts** - Conflicts arise over how the resource is to be best utilized, sometimes at the expense of the fishery.

| Optional Strategies | Optional Tactics | Comments |
|---|---|---|
| 1. Recreational User (i.e. Boating, Swimming, Waterskiing) vs. Fisheries Manager (M.N.R.) | 1. Restrict all shoreline use in order to protect fisheries habitat. | -This option may not be feasible in light of the large amount of shoreline under private ownership. |
| | 2. Restrict weed removal projects to mechanical methods only. | -Ensures specific on- site removal and adjacent habitat is not affected, can also be carried out under a variety of weather conditions. |
| | 3. Restrict the removal of weed beds in warmwater fisheries to no more than 2% of lake area per year. | -Ensures sufficient amount of habitat remains for warmwater fish species which are dependent on these areas. |
| | 4. Allow the removal of weed beds at the option of the affected landowner. | -If left strictly to the discretion of the landowner, too many important habitat areas may be destroyed thus leading to a decline in the fishery. |
| | 5. Allow waters to be used for the benefit of the recreational user regardless of the consequence to the fishery or habitat. | -Will eventually lead to a decline in sport fisheries, fishing opportunities will decrease and a shift to less desirable species may occur. |
| 2. Recreational Angler vs. Commercial Harvester (Baitfish) | 1. Eliminate baitfish harvesting in waters containing sports fish. | -This option may cause economic losses to occur to some bait fish harvesters as they will be required to use alternate waters. Waters containing sports fish on the other hand will no longer suffer losses from their food base. |
| | 2. Restrict the amount of gear used in harvesting baitfish in waters containing sports fish. | -Economic hardship is reduced as well as preventing an over-harvest of forage fish needed to support the sports fishery. |
| | 3. Allow any amount of commercial harvesting gear to be used in waters containing sports fish. | -Over-harvest of baitfish stocks may erode the sports fishery's food base thus causing stress on the population. |
| | 4. Step up enforcement of regulations regarding identification on baitfish traps (i.e. - make it illegal to have a baitfish trap in your possession without identification on it.) | -Would reduce the loss or destruction of baitfish equipment by harvesters. |

**6. Problem/Issue - Lack of Public Awareness and Unrealistic Resource Demands - Conflicts often arise due to a lack of understanding concerning the nature of the resource.**

| Optional Strategies | Optional Tactics | Comments |
|---|---|---|
| **1. Expand public information, education and involvement** | 1. Make all existing and future fisheries management plans available to the public for input. | -Encourage the public to become involved in the planning for resources. |
| | 2. Request input from local fish and game clubs and other concerned groups. | -Part of present management practices with regards to seasons, harvesting etc. |
| | 3. Make CFIP information available to all groups in the area (Fish and Game Clubs presently involved). | -Good practice providing care is taken in selection of projects. |
| | 4. Make information available to all interested groups regarding private stocking of public waters (Fish and Game Clubs presently involved). | -Stock availability makes it necessary in some areas to stock in alternate years. As well, lack of funding reduces the Ministry's ability to purchase more expensive fish stocks i.e. Rainbow Trout. |
| | 5. Develop an active extension program and provide basic information through visitations to various service clubs, senior citizens' groups, local schools etc. | -In order to expand this program realistically, more funding and manpower will be required to enlarge the existing extension program. |
| | 6. Present workshops through fisheries specialists to provide information such as natural alternatives vs. stocking for rehabilitation of fish populations and other pertinent information regarding the management of the fisheries resource. | -This option could follow a similar format to trapper workshops. |
| | 7. Use of the general media - coverage could be provided through newsletters, radio talk shows, more district open houses, more local newspaper coverage of events, projects etc. | -Information would reach a larger audience. |

7. **Problem/Issue - Limited Access** - **Certain angling opportunities are unavailable as a result of inadequate access on some of the districts lakes and rivers.**

| Optional Strategies | Optional Tactics | Comments |
|---|---|---|
| **1. Increase public access.** | 1. Purchase and develop more access points. Encourage development of boat launching facilities and public fishing piers. | -In many cases this is the only alternative to lakes/rivers with restricted access. In particular, access to the Ottawa River is restricted in certain areas (e.g. 4th Chute to Castleford). Funding should be requested to improve and/or purchase areas where easy access to the river would be available. This option, however, may not be feasible in light of current real estate values. Advantage should be taken of the sale of crown corporation property such as Ontario Hydro etc. |
| | 2. Discourage individuals or municipalities from restricting public access. | -This option will require the cooperation of municipalities. Individuals usually restrict access for their own gain. When access to crown waters is restricted, Ministry policy states that stocking of those waters cease. |
| | 3. Agreements with private landowners. | -Beneficial where only alternative is access over private land. |
| | 4. Educate users regarding respect for property i.e trespassing, anti-litter campaign etc. | -Promotes stewardship among resource users. |
| | 5. Clearly mark access points on Ministry publications. | -Ensures optimum use of existing access points. |

8. **Problem/Issue - Inadequate Scientific Knowledge** - **Lack of a sufficient scientific knowledge base hinders sound management of the fishery resource.**

| Optional Strategies | Optional Tactics | Comments |
|---|---|---|
| **In order to address this problem, it is essential that the district:** | | |
| **Promote the Expansion of the Fisheries Scientific Knowledge Base** | Identify areas where more information and research are required. | -These tactics (1,2,3) are not optional and must be implemented to ensure adequate data collection/analysis. These in turn will be used to provide a basis for sound management apractices. |
| | Implement programs to assess current management practices. | |
| | Ensure the transfer of knowledge between M.N.R. and user groups and also internally between districts. | |
| | 1. Involve district in more experimental management or research programs and assess results. | -Priorities, operational plans, and every day work problems will dictate the extent of this option. |
| | 2. A resident angling licence will allow M.N.R. to assess needs and wants of clients.. | -Presently under consideration at provincial level. |
| | 3. Increase knowledge of user groups through intensive creel census programs, angler surveys, etc. | -Funding and manpower are necessary requirements. |

## 4.0 PUBLIC REVIEW

As mentioned earlier in the summary, public consultation and review is an important component of the fisheries planning process.

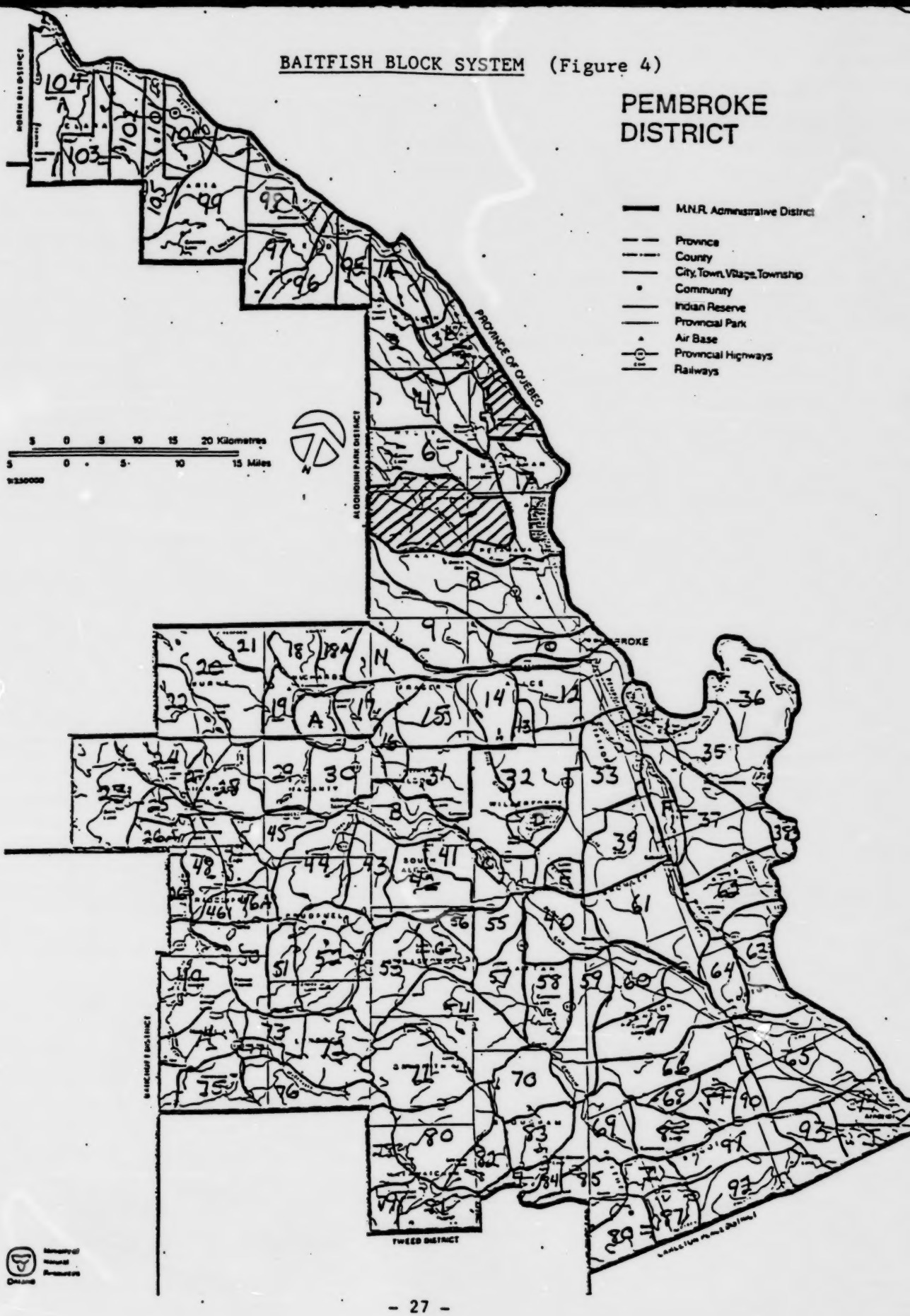
In order to aid you in selecting preferred management strategies and tactics for inclusion in the District Fisheries Management Plan, we have prepared the following questionnaire. We would ask for your cooperation in completing the form as your input will be taken into consideration during the preparation of the plan. If you have any questions or wish to discuss any aspect of this plan please contact Mr. L. K. Buckingham or Mr. A. Armstrong.

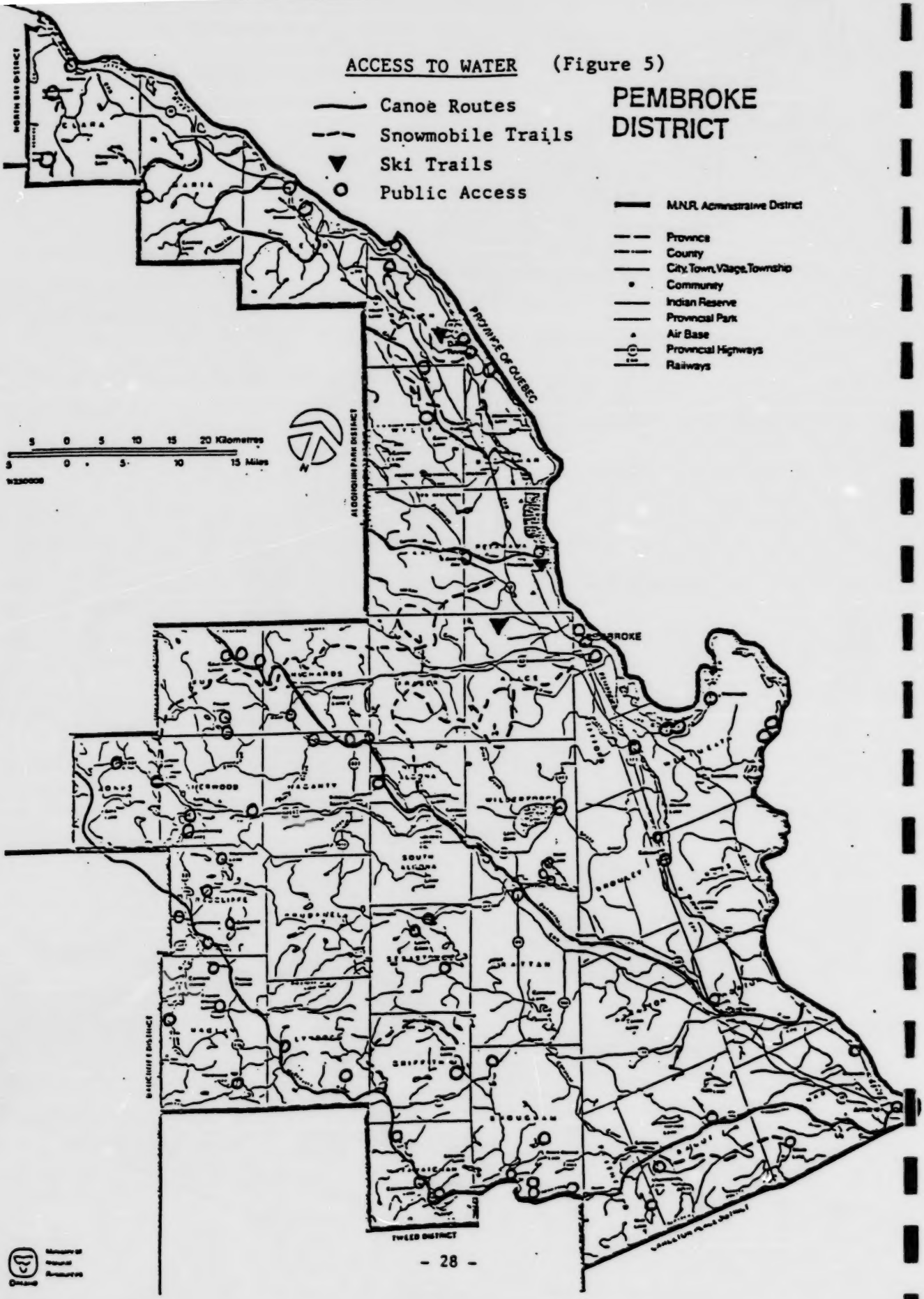
Please return the questionnaire within two weeks of the open house to:

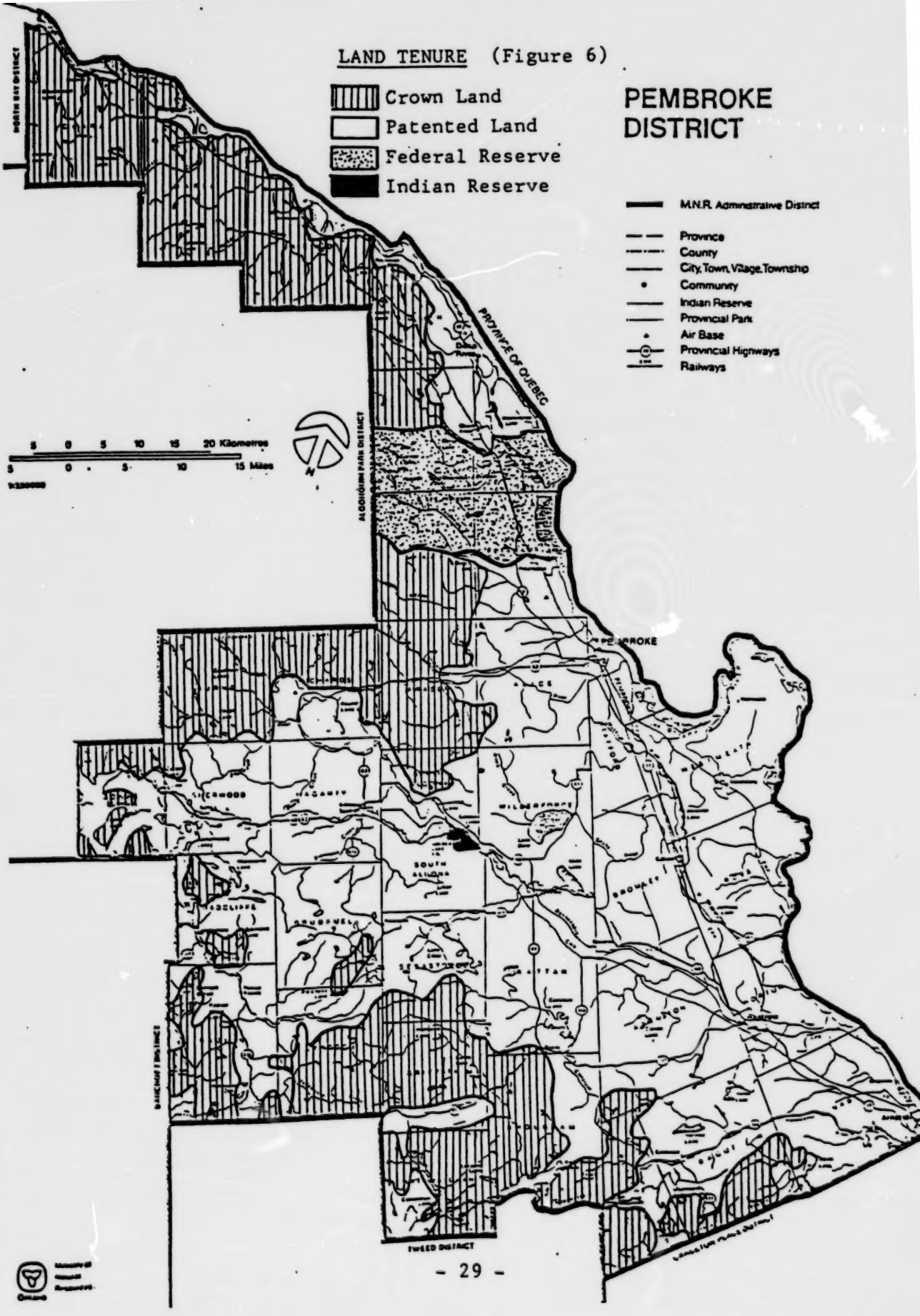
District Manager
Ministry of Natural Resources
P.O. Box 220
Pembroke, Ontario
K8A 6X4

## 5.0 APPENDIX/REFERENCES

BAITFISH BLOCK SYSTEM (Figure 4)




ACCESS TO WATER (Figure 5)
Canoe Routes
Snowmobile Trails
Ski Trails
Public Access
PEMBROKE DISTRICT
M.N.R. Administrative District
Province
County
City, Town, Village, Township
Community
Indian Reserve
Provincial Park
Air Base
Provincial Highways
Railways
5 0 5 10 15 20 Kilometres
5 0 5 10 15 Miles
N
PROVINCE OF QUEBEC
ALGONQUIN PARK DISTRICT
NORTH BAY DISTRICT
BANCROFT DISTRICT
TWEED DISTRICT
PEMBROKE


LAND TENURE (Figure 6)
Crown Land
Patented Land
Federal Reserve
Indian Reserve
PEMBROKE DISTRICT
M.N.R. Administrative District
Province
County
City, Town, Village, Township
Community
Indian Reserve
Provincial Park
Air Base
Provincial Highways
Railways
PROVINCE OF QUEBEC
ALGONQUIN PARK DISTRICT
PEMBROKE
WILBERFORCE
BROUDWELL
TWEED DISTRICT
5 0 5 10 15 20 Kilometres
5 0 5 10 15 Miles

## REFERENCES


Hiscock, N.B.L., 1984. Pembroke District Fisheries Management Plan, Background Information, unpublished document, Ontario Ministry of Natural Resources, Pembroke, District.

Ministry of Natural Resources, 1977. Background Information, Pembroke District, Algonquin Region, Ontario Ministry of Natural Resources, Pembroke District, 55 p.

Ministry of Natural Resources, 1983. Pembroke District Land Use Guidelines, Ontario Ministry of Natural Resources, Pembroke District, 59 p.

Ministry of Natural Resources, 1985. Planning Manual, District Fisheries Management Plans, draft planning manual, Fisheries Branch, Toronto, 84 p.

Ministry of Natural Resources, 1985. Pembroke District Fisheries Management Planning, Terms of Reference, unpublished document, Ontario Ministry of Natural Resources, Pembroke District, 12 p.

# Pembroke District Fisheries Management Plan Background Information And Optional Management Strategies and Tactics

## QUESTIONNAIRE

Please indicate your interest in the fisheries of Pembroke District.

_____ angler
_____ bait fisherman
_____ tourist outfitter
_____ other (explain)

Comments

_____
_____
_____
_____
_____

1. Background Information

Do you feel the background information document is complete and accurate?

Comments

_____
_____
_____
_____
_____
_____

## 2. Problems and Issues

In order of importance (1 - 8) rank the following problems/issues as you see them affecting the fishery resource in Pembroke District.

_____ Habitat Loss/loss of environmental quality

_____ Limited coldwater habitat/producing a coldwater fishery to accommodate all users

_____ Illegal harvest

_____ Introduction of exotic or non-indigenous species

_____ User conflicts

_____ Lack of public awareness and unrealistic resource demands

_____ Limited access

_____ Inadequate scientific knowledge

Comments

_____

_____

_____

_____

_____

_____

_____

_____

## 3. Strategies and Tactics

- The strategies and tactics are listed on the following pages and we give you the opportunity to rank and comment on them.
- Indicate the level of importance you feel each one has by checking off the appropriate box.
- List any additional strategies or tactics you feel are important in the comment space provided.

.. **Problem/Issue – Habitat Loss And/Or Loss of Environmental Quality**

**Loss of habitat or environmental quality may result from a number of causes thus influencing the number of fishing opportunities available.**

| Optional Strategies | Not Important – Very Important 1 2 3 4 5 | Optional Tactics | Not Important – Very Important 1 2 3 4 5 |
|---|---|---|---|
| 1. Regulate/Prohibit Shoreline Development | | 1. Control development on all lakes. | |
| | | 2. Restrict development on the lakes with coldwater fisheries. | |
| | | 3. Restrict development in areas immediately adjacent to spawning and nursery areas for both cold and warmwater species. | |
| | | 4. Allow complete freedom of development on all lakes. | |
| 2. Rehabilitate Degraded Habitat | | 1. Initiate Ministry projects to rehabilitate spawning areas. | |
| | | 2. Promote CFIP projects in conjunction with Ministry projects to rehabilitate spawning and nursery areas in major fisheries. | |
| | | 3. Direct all rehabilitation programs to CFIP projects and restrict Ministry input to expertise only. | |

**1. Problem/Issue - Habitat Loss (Continued)**

**Optional Strategies**

2. Rehabilitate Degraded Habitat (Cont'd.)

3. Create New Fisheries Habitat

| Not Important | | | | Very Important |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| | | | | |

**Optional Tactics**

4. Rely on nature to rehabilitate the degraded areas and allow natural selection to select the best species for the habitat.

1. Reclaim coldwater lakes (brook trout habitat) with the use of toxicants

2. Create and enlarge warmwater areas by the addition of suitable materials into optimum fast water (walleye). Clean coldwater streams and add deflectors, hides and suitable spawning materials for trout species.

3. Rehabilitate lake trout spawning shoals.

4. Utilize the fisheries habitat in whatever condition it may be in without any improvements.

**1. Problem/Issue - Habitat Loss (Continued)**

**Optional Strategies**

| | Not Important | | | | Very Important |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| 4. Monitor Fish Contaminants | | | | | |

Comments

_____

_____

_____

_____

_____

**Optional Tactics**

| | Not Important | | | | Very Important |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| 1. Using the prescribed techniques in conjunction with the Ministry of the Environment monitor the contaminant levels in sports fish in selected lakes. | | | | | |

**2. Problem/Issue - Limited Coldwater Habitat/Producing a Coldwater Fishery to Accommodate All Users**

**Most Lake Trout lakes in the district have some natural reproduction, but because of the loss of habitat (i.e. degradation of spawning beds) must rely on stocking for their populations.**

**Optional Strategies**

| | Not Important 1 | 2 | 3 | 4 | Very Important 5 |
|---|---|---|---|---|---|
| 1. Protect the Lake Trout Fisheries in the District and Evaluate Suitability | | | | | |

**Optional Tactics**

| | Not Important 1 | 2 | 3 | 4 | Very Important 5 |
|---|---|---|---|---|---|
| 1. Evaluate all lake trout lakes in the district and protect only those which have natural spawning. | | | | | |
| 2. Protect the lake trout lakes which still maintain the biological and chemical characteristics required to provide a viable Lake Trout fishery. | | | | | |
| 3. Protect all the lakes which had lake trout populations whether they can still produce a fishery or not. | | | | | |
| 4. Protect the viable lake trout fisheries in the district (e.g. Bark Lake, Kamaniskeg Lake, Burns Lake, Charlotte Lake, Diamond Lake.) Convert those which are not viable lake trout fisheries to other more suitable coldwater fisheries such as rainbow trout or splake. | | | | | |
| 5. Convert all the lake trout fisheries in the district to other coldwater fisheries (i.e. splake, rainbow trout). | | | | | |

. **Problem/Issue - Limited Coldwater Habitat (Continued).**

**Optional Strategies**

1. Protect the Lake Trout Fisheries in the District and Evaluate Suitability (Cont'd.)

2. Reduce Pressure on Lake Trout Populations

3. Regulate Harvest in Extreme Cases

Not Important - Very Important
1 2 3 4 5

**Optional Tactics**

Not Important - Very Important
1 2 3 4 5

6. Discontinue stocking lake trout lakes and allow the lakes to select the appropriate species.

1. Regulate length of season.

2. Encourage the shifting of pressure to other species such as walleye and pike.

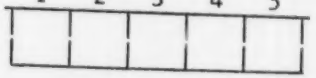
3. Create new fisheries in areas adjacent to the lake trout fisheries. Stocking former lake trout lakes with splake as an alternative to lake trout.

1. On lakes such as Burns Lake which have extreme pressure, consider any or all of the following:
   1. Restrict equipment to one line per fishermen.
   2. Reduce daily limit to 2 lake trout.
   3. Close the lake to winter fishing.
   4. Introduce size limits.

**Optional Strategies**

Not Important - Very Important
1 2 3 4 5

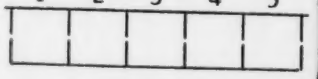
4. Reduce the Illegal Harvest



**Optional Tactics**

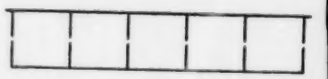
Not Important - Very Important
1 2 3 4 5

1. Request from the judicial system that for convictions for over limits of coldwater fish and set lines in coldwater lakes, the loss of fishing privileges be part of any penalty.
   -would fit in with a Provincial angling licence.
   -would educate the public of the impact of over fishing.

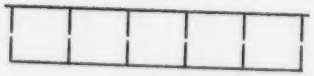


2. Increase public awareness/ education.

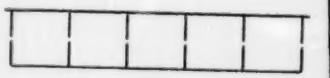
3. Increase enforcement effort.



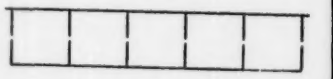
5. Fish stocking



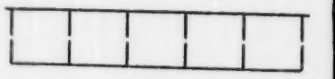
1. Maintain current level and frequency of stocking on an alternate year basis.



2. Change the rotation to every year on lakes which receive heavy pressure.



3. Stock lakes which are easily accessible yearly and stock lakes not easily accessible on a three or four year rotation basis.



. **Problem/Issue - Limited Coldwater Habitat (Continued).**

**Optional Strategies**

5. Fish Stocking (Cont'd.)

6. Protect Fisheries From Intensive Angling Impacts

Not Important - Very Important
1 2 3 4 5

**Optional Tactics**

Not Important - Very Important
1 2 3 4 5

4. Close selected brook trout lakes to winter fishing to provide a fishery which supplies a larger fish for the more selective angler during the summer.

5. Utilize splake and rainbow trout as alternatives for lake trout opportunities.

6. Reclaim brook trout lakes which produce low return from stocking programs due to competition from coarse fish.

7. Only stock trout which are bigger than 20 fish to the pound. This will ensure they have a better chance for survival.

8. Encourage Fish and Game Clubs to adopt a lake to stock.

1. Eliminate all forms of fish derbies which kill the target species.

**2. Problem/Issue - Limited Coldwater Habitat (Continued)**

**Optional Strategies**

6. Protect Fisheries From Intensive Angling Impacts (Cont'd.)

**Optional Tactics**

| | Not Important 1 | 2 | 3 | 4 | Very Important 5 |
|---|---|---|---|---|---|
| 2. Eliminate fish derbies in which the target species are coldwater Salmonids. | | | | | |
| 3. Eliminate fish derbies which kill the target species in all lakes under 500 ha. | | | | | |
| 4. Restrict fish derbies which kill the target species to Pan fish only. | | | | | |
| 5. Allow fishing tournaments where the target species are weighed and released. | | | | | |
| 6. Allow all forms of fish derbies during the open season for all species. | | | | | |
| 7. Discourage the use of tagged fish for large prizes which entice anglers who would not ordinarily take part in this type of recreation. | | | | | |

Comments

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. **Problem/Issue - Illegal Harvest - The illegal harvest of fish results in severe impacts on fish stocks as well as the loss of legitimate opportunities.**

**Optional Strategies**

| | Not Important 1 | 2 | 3 | 4 | Very Important 5 |
|---|---|---|---|---|---|
| 1. Minimize the Illegal Harvest | | | | | |

**Optional Tactics**

| | Not Important 1 | 2 | 3 | 4 | Very Important 5 |
|---|---|---|---|---|---|
| 1. Close winter fishery to stop set line fishing - severe problems on Round Lake, Golden Lake, Charlotte Lake and many of the smaller lakes which will not stand the pressure. | | | | | |
| 2. Make it illegal to take fish by any means other than angling - (any species any time) - no spearing or dipping during the spring months for common white sucker. | | | | | |
| 3. Set up "Report a Poacher" program for the public and educate them to report ongoing instead of after the fact infractions. | | | | | |
| 4. Hire an additional Conservation officer. | | | | | |



Comments

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4. **Problem/Issue - Introduction of Exotic or Non-Indigenous Species** - The introduction of these species creates competitive stress on existing sports fisheries.

**Optional Strategies**

| | Not Important 1 | 2 | 3 | 4 | Very Important 5 |
|---|---|---|---|---|---|
| 1. Restrict Access of Undesirable Fish to Selected Waters | | | | | |
| 2. Rehabilitate Suitable Waters Which Have Been Lost to Exotic or Non-Indigenous Species | | | | | |

**Optional Tactics**

| | Not Important 1 | 2 | 3 | 4 | Very Important 5 |
|---|---|---|---|---|---|
| 1. Restrict the use of live bait in all coldwater fisheries. | | | | | |
| 2. Tighten the inspection system and license issuing procedure for the bait industry. | | | | | |
| 3. Pass legislation which would make it illegal to possess or use bait fish in any form in all district lakes. | | | | | |
| 1. Reclaim small Trout lakes lost to warmwater species (perch). Stubinski Lake, Acorn Lake, Buck Mountain Lake are examples. | | | | | |
| 2. Controlled removal of non-indigenous species by netting. Calabogie Lake is an example. | | | | | |
| 3. Introduce top predators to larger lakes with suitable habitat (rainbow - splake) Halfway Lake, McMaster Lake, Schavens Lake for example. | | | | | |
| 4. Destroy coarse fish spawning beds by mechanical means in the larger coldwater lakes. | | | | | |

.. **Problem/Issue - Introduction of Exotic or Non-Indigenous Species (Continued)**

| Optional Strategies | Optional Tactics |
|---|---|
| 2. Rehabilitate Suitable Waters Which Have Been Lost to Exotic or Non-Indigenous Species | 5. Educate the public about the impact and consequences of accidental or intentional introduction. |

| Not Important | | | | Very Important |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| | | | | |

Comments

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5. **Problem/Issue - User Conflicts** - Conflicts arise over how the resource is to be best utilized, sometimes at the expense of the fishery.

| | Not Important 1 | 2 | 3 | 4 | Very Important 5 |
|---|---|---|---|---|---|
| 1. Recreational User (i.e. Boating, Swimming, Waterskiing) vs. Fisheries Manager (M.N.R.) | | | | | |
| 2. Recreational Angler vs. Commercial Harvester (Baitfish) | | | | | |

**Optional Tactics**

| | Not Important 1 | 2 | 3 | 4 | Very Important 5 |
|---|---|---|---|---|---|
| 1. Restrict shoreline use in order to protect fisheries habitat. | | | | | |
| 2. Allow waters to be used for the benefit of the recreational user regardless of the consequence to the fishery or habitat. | | | | | |
| 3. Restrict weed removal projects to mechanical methods only. | | | | | |
| 4. Restrict the removal of weed beds in warmwater fisheries to no more than 2% of lake area per year. | | | | | |
| 5. Allow the removal of weed beds at the option of the affected landowner. | | | | | |
| 1. Eliminate baitfish harvesting in waters containing sports fish. | | | | | |
| 2. Restrict the amount of gear used harvesting baitfish in waters containing sports fish. | | | | | |

5. Problem/Issue - User Conflicts (Continued)

Optional Strategies

2. Recreational Angler
vs.
Commercial Harvester
(Baitfish) (Cont'd.)

Comments

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Optional Tactics

| | Not Important 1 | 2 | 3 | 4 | Very Important 5 |
|---|---|---|---|---|---|
| 3. Allow any amount of commercial harvesting gear to be used in waters containing sports fish. | | | | | |
| 4. Step up enforcement of regulations regarding identification on baitfish traps (i.e. - make it illegal to have a baitfish trap in your possession without identification on it.) | | | | | |

**6. Problem/Issue - Lack of Public Awareness and Unrealistic Resource Demands - Conflicts often arise due to a lack of understanding concerning the nature of the resource.**

**Optional Strategies**

| | Not Important 1 | 2 | 3 | 4 | Very Important 5 |
|---|---|---|---|---|---|
| 1. Expand public information, education and involvement | | | | | |

**Optional Tactics**

| | Not Important 1 | 2 | 3 | 4 | Very Important 5 |
|---|---|---|---|---|---|
| 1. Make all existing and future fisheries management plans available to the public for input. | | | | | |
| 2. Request input from local fish and game clubs and other concerned groups. | | | | | |
| 3. Make CFIP information available to all groups in the area (Fish and Game Clubs presently involved). | | | | | |
| 4. Make information available to all interested groups regarding private stocking of public waters (Fish and Game Clubs presently involved). | | | | | |
| 5. Develop an active extension program and provide basic information through visitations to various service clubs, senior citizens' groups, local schools etc. | | | | | |

5. **Problem/Issue - Lack of Public Awareness and Unrealistic Resource Demands (Continued)**

**Optional Strategies**

1. Expand public information, education and involvement

**Optional Tactics**

Not Important - Very Important

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 6. Present workshops through fisheries specialists to provide information such as natural alternatives vs. stocking for rehabilitation of fish populations and other pertinent information regarding the management of the fisheries resource. | | | | | |
| 7. Use of the general media - coverage could be provided through newsletters, radio talk shows, more district open houses, more local newspaper coverage of events, projects etc. | | | | | |



Comments

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7. **Problem/Issue - Limited Access** - Certain angling opportunities are unavailable as a result of inadequate access on some of the districts lakes and rivers.

**Optional Strategies**

| | Not Important 1 | 2 | 3 | 4 | Very Important 5 |
|---|---|---|---|---|---|
| 1. Increase public access. | | | | | |

**Optional Tactics**

| | Not Important 1 | 2 | 3 | 4 | Very Important 5 |
|---|---|---|---|---|---|
| 1. Purchase and develop more access points. Encourage development of boat launch facilities and public fishing piers. | | | | | |
| 2. Discourage individuals or municipalities from restricting public access. | | | | | |
| 3. Agreements with private landowners. | | | | | |
| 4. Educate users regarding respect for property, i.e. trespassing, anti-litter campaign etc. | | | | | |
| 5. Prepare pamphlets for distribution regarding lands available for public access. | | | | | |



Comments

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**8. Problem/Issue – Inadequate Scientific Knowledge – Lack of a sufficient knowledge base hinders sound management of the fishery resource.**

**Optional Strategies**

| | Not Important 1 | 2 | 3 | 4 | Very Important 5 |
|---|---|---|---|---|---|
| 1. Promote the Expansion of the Fisheries Scientific Knowledge Base. | | | | | |

**Optional Tactics**

| | Not Important 1 | 2 | 3 | 4 | Very Important 5 |
|---|---|---|---|---|---|
| 1. Involve district in more experimental management or research programs and assess results. | | | | | |
| 2. A resident angling licence will allow M.N.R. to assess needs and wants of clients. | | | | | |
| 3. Increase knowledge of user groups through intensive creel census programs, angler surveys, etc. | | | | | |

Comments

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If you wish to make additional comments please use the space below or the back of the sheet.

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All responses will be summarized and will be available upon request.

The draft final management plan will also be presented to the public for review and comment. If you wish to receive further information regarding the plan, please indicate your name and mailing address below.

NAME _____

MAILING ADDRESS _____

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# PEMBROKE DISTRICT
# FISHERIES RESOURCE BASE (FIGURE 3)

5 0 5 10 15 20 Kilometres

5 0 5 10 15 Miles

1:250000

- M.N.R. Administrative District
- Area included for District Planning
- Province
- County
- City, Town, Village, Township
- Community
- Indian Reserve
- Provincial Park
- Air Base
- Provincial Highways
- Railways

## LEGEND

- BROOK TROUT
- LAKE TROUT
- SPLAKE
- RAINBOW TROUT
- WARM WATER SPECIES
- MAJOR WALLEYE SPAWNING AREAS

NOTE

LAKES, RIVERS and STREAMS NOT SPECIFIED AS TO SPECIES ARE WARM WATER FISHERIES.
WARM WATER SPECIES INCLUDE LARGE AND SMALL MOUTH BASS, PIKE AND WALLEYE.

NORTH BAY DISTRICT

ALGONQUIN PARK DISTRICT

PROVINCE OF QUEBEC

PEMBROKE

CLARA

MARIA

FIELD

RALPHTON

WYLIE

BICHAN

KAY

PETAWAWA

BURNS

RICHARDS

FRASER

ALICE

STAFFORD

WESTMEATH

NORTH ALGONA

SHERWOOD

HAGARTY

JONES

▲ MAJOR WALLEYE SPAWNING AREAS

NOTE

LAKES, RIVERS and STREAMS NOT SPECIFIED AS TO SPECIES ARE WARM WATER FISHERIES.
WARM WATER SPECIES INCLUDE LARGE AND SMALL MOUTH BASS, PIKE AND WALLEYE.

ALGONQUIN PARK

PETAWAWA

McKAY

PEMBROKE

RENFREW

BURNS

RICHARDS

FRASER

ALICE

PEMBROKE

STAFFORD

WESTMEATH

JONES

SHERWOOD

McNAUGHTAN

NORTH ALGONA

WILBERFORCE

SOUTH ALGONA

BROMLEY

ROSS

RADCLIFFE

BRUDENELL

SEBASTOPOL

RAGLAN

LYNDOCH

GRIFFITH

MATAWATCHAN

BROUGHAM

HAGARTY

RICHARDS

ADMASTON

BARRETT CHUTE

BAGOT

BLITHFIELD

BANCROFT DISTRICT

TWEED DISTRICT

CARLETON PLACE DISTRICT

Ministry of Natural Resources

Ontario